OPTICAL DEVICE PACKAGES HAVING IMPROVED CONDUCTOR EFFICIENCY, OPTICAL COUPLING AND THERMAL TRANSFER

ABSTRACT OF THE DISCLOSURE

An optical device package having improved conductor efficiency, optical coupling and thermal transfer, as well as various methods for packaging a semiconductor die provide reduced connection length, and improved optical and thermal characteristics. In one package, a conductive circuit pattern disposed on a transparent or translucent cover connects bond pads on the light receiving surface of the semiconductor die to external electrical contacts. The construction of the package reduces connection length and eliminates the air gap between the glass and the die.

In another package, a substrate having a protruding wall supports the glass and the substrate provides an electrical connection to terminals for connection to an external device.

In another package, the glass is supported by a die mounting board that supports the semiconductor die and includes leads for connection to an external device.

In other packages, the glass is supported directly by the semiconductor die and the die is supported by an encapsulated assembly including leads that support the semiconductor die.